

Description

5

Soap Dispenser with Reservoir for Bubble Wand

Technical Field

The present invention relates to devices used for dispensing liquid soaps or detergents. More particularly, 10 a liquid soap dispenser having a reservoir for soap and a bubble wand.

Background of the Invention

15 A number of wands and containers with wands are known in the art. For example, United States patent 4,976,645 describes a bubble forming and bath soap dispensing device comprising an elongated shaft having a U-shaped handle on one end and a supporting ring on the 20 other. Soap is molded around the supporting ring creating a small aperture through the center. During use water flowing over the molded soap forms a film in the small aperture. If air is passed through the aperture when this film is present a bubble is formed. Unfortunately, the 25 device can be awkward to use and must be submerged in water each time bubbles are desired. This decreases the useful lifetime of the device because water dissolves the solid soap. In addition the consumer may not have the option of a variety of soaps as might be available on a 30 device which may be filled with a desired liquid soap.

United States patent 3,818,627 describes a bubble wand for use with a bottle containing bubble film solution. The wand has a threaded bottle cap removably attached to one end of the wand to prevent leakage of the

bubble film solution when the cap is securely affixed to the bottle. Unfortunately, the bubble film solution is generally not a cleansing detergent or soap and if cleansing detergent were substituted for the bubble film 5 solution it would be difficult to dispense a desired quantity from the bottle for bathing.

United States patent 5,246,046 describes a spill resistant bottle for a bubble film solution. The bottle contains an inner funnel connected to the mouth of the 10 bottle that extends into the bottle a distance sufficient to allow bubble film solution access by the wand head while preventing escape of the bubble film solution if the bottle is tipped over. Unfortunately, the bubble film solution is generally not a cleansing detergent or soap 15 and it would be difficult at best to dispense detergent or soap from this type of spill resistant container.

Consequently, there is a need for a liquid soap dispensing container that dispenses a desired volume of soap having a reservoir for soap able to accept a bubble 20 wand for creating bubbles.

Summary of the Invention

The present invention provides a vessel having at least one aperture; a means for dispensing the liquid 25 soap from the vessel connected to the aperture; and at least one exterior reservoir formed in, provided on, or affixed to the vessel for retaining a quantity of the liquid soap, the at least one exterior reservoir having dimensions able to receive a bubble wand.

30 In one embodiment a liquid soap dispensing container is provided comprising a vessel having a top, a base and side walls enclosing an internal cavity, wherein the top comprises an aperture; a means for dispensing the liquid

soap from the vessel connected to the aperture; and an exterior reservoir formed in or provided on the top or the side wall or the base for retaining a quantity of the liquid soap, the exterior reservoir having dimensions able to receive a bubble wand.

In another embodiment a liquid soap dispensing container is provided comprising a vessel having a top, a base and side walls enclosing an internal cavity, wherein the vessel comprises at least two apertures; a means for dispensing the liquid soap from the vessel connected to one of the at least two apertures; and an exterior reservoir formed in or provided on the top, the side wall or the base for retaining a quantity of the liquid soap, the exterior reservoir having dimensions able to receive a bubble wand.

In yet another embodiment the dispensing means is a finger or hand actuated pump. In still another embodiment the vessel comprises a top a base and side walls enclosing an internal cavity. The reservoir maybe formed in or provided on the top, the side walls or the base of the vessel. In another embodiment the liquid soap falls directly into the reservoir from the dispensing means. Alternatively, the side wall of the vessel further comprises a channel that directs the liquid soap into said reservoir from the dispensing means. In still another embodiment the side walls of the vessel are flexible. A vessel with flexible side walls may be of a design that emits liquid soap when squeezed. The liquid soap dispensing container may further comprise a bubble wand, liquid soap or both bubble wand and liquid soap.

In another aspect of the present invention a liquid soap holding device for a soap bottle is provided

comprising a body having an aperture able to receive the top of a soap bottle; a reservoir and a means for affixing the soap holding device to the soap bottle, the reservoir able to retain a quantity of liquid soap and 5 having dimensions able to receive a bubble wand, the reservoir being formed within or provided on the body or the reservoir being formed when the soap holding device is affixed to the soap bottle.

In one embodiment the liquid soap holding device 10 further comprises a channel or forms a channel when affixed to the soap bottle, the channel directing the liquid soap dispensed into the reservoir. Alternatively, the liquid soap may be dispensed directly into the reservoir. In another embodiment the holder may further 15 comprising a bubble wand.

In still another aspect of the present invention a holder for a soap bottle is provided comprising a body able to receive a soap bottle and a reservoir, the reservoir able to retain a quantity of liquid soap and 20 having dimensions able to receive a bubble wand, the reservoir being formed within or provided on said body or said reservoir being formed when the soap bottle is placed in the holder.

In one embodiment the holder for a soap bottle may 25 further comprise a channel or forms a channel upon the placement of a soap bottle into or onto the holder, the channel directing the liquid soap into the reservoir. Alternatively, the liquid soap dispensed from the soap bottle may fall directly into the reservoir. In another 30 embodiment the holder may further comprise a bubble wand.

Description of the Figures

Figure 1: Is a diagrammatic representation of a soap

dispenser of the present invention having the reservoir in the side wall showing a top view (A), a front view (B), a side view showing internal structures (C) the bottom view (D) and two perspective views one showing the 5 wand above the reservoir (E);

Figure 2: Is a diagrammatic representation of a soap dispenser of the present invention having the reservoir on the top showing a top view (A), a front view (B), a side view showing internal structures (C) the bottom view 10 (D) and a perspective view with the wand above the reservoir (E); and

Figure 3: Is a diagrammatic representation of a soap dispenser reservoir of the present invention showing a top view (A), a front view (B), a side view showing 15 internal structures (C) the bottom view (D) a perspective view of the reservoir attached to a soap dispenser with the wand above the reservoir (E); and a perspective view of the soap reservoir shown separately (F).

20 Detailed Description of the Invention

Unless defined otherwise, all terms used herein have the same meaning as is commonly understood by one of skill in the art to which this invention belongs. All 25 patents, patent applications and publications referred to throughout the disclosure herein are incorporated by reference in their entirety. In the event that there is a plurality of definitions for a term herein, those in this section prevail.

The terms "detergent" and "liquid soap" as used 30 herein refer to a compound or mixture of compounds containing at least one surfactant able to assist in the

saponification of hydrophobic compounds such as oils in water.

The term "affixed" as used herein refers to two separate elements that have been joined permanently so 5 that they cannot be separated from one another or removably so that they may be separated from one another.

The term "connected" as used herein refers to two separate elements that have been joined permanently so that they cannot be separated from one another or 10 removably so that they may be separated from one another. In addition this term refers to one element that has been formed of or molded from a single piece of material such that it comprises two elements. For example, wherein the vessel side wall comprised of a single piece of flexible 15 plastic is partially invaginated to form a reservoir. In this case a portion of the side wall which was initially one element has been formed or molded into a second element, the reservoir.

The term "formed in" as used herein refers to a 20 portion of an element of the invention that is used or transformed into another element making both elements an integral part of each other. Such as, for example, wherein a portion of the side wall of the vessel element is invaginated into the internal cavity of the vessel 25 forming the reservoir element.

The term "provided on" as used herein refers to one element being affixed, attached or otherwise connected to another element wherein both elements are distinct and separate from each other. Such as, for example, wherein a 30 separate reservoir element is affixed to the side wall of the vessel element. In this example neither element is

formed from the materials of the other element making each element distinct and separate from the other.

The present invention provides a vessel having at least one aperture; a means for dispensing the liquid 5 soap from the vessel connected to the aperture; and at least one reservoir formed in, provided on, or affixed to the vessel for retaining a quantity of the liquid soap, the at least one reservoir having dimensions able to receive a bubble wand.

10

I. The Vessel

The vessel **12** may be of any type known to those skilled in the art enclosing an internal cavity having at least one aperture **14** and able to hold a liquid. The 15 vessel **12** may be provided in a variety of shapes including spherical, cylindrical having a round or oval footprint, cuboidal having a square, rectangular or trapazoidal profile, free-formed or any combination thereof. The vessel **12** may be constructed of a variety of 20 materials including for example stone, metal or polymer. Preferably the vessel **12** is constructed of a durable, impact resistant, resilient, flexible polymer. Preferably the vessel **12** is able to maintain a minimal but sufficient pressure necessary to move liquid soap up and 25 out of the dispensing means **16**.

In one preferred embodiment the vessel **12** has a top, side walls and a base and is cylindrical in shape having a round footprint. The top comprises a single aperture **14** or mouth. The diameter of the mouth may vary but is 30 preferably sufficiently large enough to allow the user to easily refill the vessel **12** while reducing the amount of potential spillage. Most preferably the diameter is not

less than 0.5 inches and not more than the diameter of the vessel **12**. The dispensing means **16** may be removably affixed to the aperture **14** or mouth by a variety of methods known to those skilled in the art including for example, press-fit, snap-fit and screw threads. Alternatively, the dispensing means **16** may be permanently affixed to the vessel **12** mouth by for example an adhesive or weld. If the dispensing means **16** is permanently affixed to the vessel **12** it is preferable that the vessel **12** has at least one other aperture **14** or mouth for refilling the vessel **12** with liquid soap.

The vessel **12**, or the top of the vessel **12**, may be formed in a variety of shapes that would appeal to the user. In its most basic form the top may be flat, domed or cone-shaped. One skilled in the art would recognize that the top could be formed in the shape of, for example, a cartoon character, an animal or a fish. Preferably, when the top is in this form it is designed such that the function of the dispenser is not impaired. More particularly, the form of the vessel or top of the vessel does not prevent the dispensed liquid from reaching the reservoir **20** or the hand of the user. Alternatively, the shape selected for the vessel or top of the vessel may assist in directing the liquid to the reservoir **20**. For example, if the top was in the shape of a fish, the liquid may be dispensed in a conduit at the tail end of the fish that would direct the liquid through the body, out of the mouth of the fish and into the reservoir **20** below. One skilled in the art would recognize that the number of potential shapes and forms of the vessel **12** that would appeal to the user is limited only by ones imagination.

In another preferred embodiment the vessel **12** is made of a flexible material such that when the vessel **12** is compressed the liquid soap is dispensed from at least one aperture **14** into the reservoir **20**.

5 When the liquid is dispensed the vessel **12** may or may not interact with the liquid on its path to the reservoir **20**. If the exterior surface of the vessel **12** does not interact with the liquid then the liquid may be dispensed directly into the reservoir **20**. In this
10 configuration, the spout of the dispensing means **16** is of sufficient length to dispense the liquid past the vessel **12** without being substantially interfered with by the vessel **12**. Preferably the liquid does not come in contact with the vessel **12** in this configuration. One skilled in
15 the art could conceive of a variety of configurations that would satisfy this condition. In one example the vessel **12** is round cylindrical-shaped with the dispensing means **16** positioned at the center of the top. In this configuration the length of the dispensing means **16** spout
20 could be greater than the radius of the top such that when the liquid is dispensed it falls directly to the reservoir **20** below without interacting with the exterior surface of the vessel **12**. In another example the length
25 of the dispensing means **16** spout is less than the radius of the top and the vessel **12** has a vertical groove or conduit that may be positioned under the dispensing means **16** spout. When dispensed the groove or conduit allows the liquid to fall directly into the reservoir **20** below without interacting with the exterior surface of the
30 vessel **12**.

If the exterior surface of the vessel **12** interacts with the dispensed liquid then the exterior surface is preferably modified to direct the liquid to the reservoir **20**. For example, the vessel **12** may have a gutter or 5 channel **18** along its perimeter extending outward from the side walls that is able to capture the liquid dispensed from the spout of the dispensing means **16**. The gutter or channel **18** is preferably sloped downward to the reservoir **20** so that the liquid captured by the gutter is directed 10 into reservoir **20**. In this configuration the top is preferably domed or cone-shaped so that the liquid dispensed from the dispensing means **16** spout may interface with the exterior surface of the vessel **12**, flow over the domed top to the gutter and then along the 15 gutter into the reservoir **20**. Alternatively, the top may be flat. In this configuration it is preferable that the length of the dispensing means **16** spout extends beyond the top to allow the dispensed liquid to fall directly to the gutter and then flow into the reservoir **20**.

20

II. The Dispensing Means

The dispensing means **16** may be any device that dispenses a desired amount of liquid from the vessel **12**. A variety of dispensing means **16** currently used in the 25 industry may be utilized with the present invention such as those described in United States patents 3,486,663, 3,715,060, 4,330,071, 4,640,441, 5,287,996, 5,332,129, and 5,579,959. Preferably the dispensing means **16** is a pump comprising a dispensing spout; a hand or finger 30 actuated plunger with a spring return, a chamber for housing liquid to be dispensed or for air to pressurize

the vessel **12** and a conduit for collecting liquid into the chamber or to the spout.

The dispensing means **16** preferably functions by depressing the plunger with a finger whereby the spout 5 emits liquid during depression and stops emitting liquid once depression has ceased. The plunger then returns to its resting position for dispensing another quantity of liquid. The desired pressure necessary for depressing the plunger may be controlled by the strength of the spring. 10 Preferably the plunger may be easily depressed with the use of a finger while able to return to resting position expeditiously. The rate at which the plunger returns to resting position may depend on the viscosity of the liquid being dispensed consequently the spring must have 15 sufficient strength to return to its resting position while being easily depressed with a finger. The ability to draw a viscous liquid through a conduit for dispensing may depend on the diameter of the conduit therefore the diameter of the conduit may be adjusted to assist in the 20 balancing of the ease of depressing the plunger with its expeditious return to resting position. Consequently, there are a variety of factors known to those skilled in the art for selecting or constructing a dispensing means **16** sufficient for use with the present invention.

25 Alternatively the dispensing means **16** is an aperture **14** in said vessel **12** such that when pressure within the vessel **12** is increased, such as when a vessel **12** constructed of flexible material is compressed (i.e. squeezed) the liquid soap is emitted from the aperture 30 **14**. Preferably the dispensing means **16** is an aperture **14** in the vessel **12** to which is affixed a conduit extending into the cavity near the base such that when pressure

within the vessel **12** is increased, such as when a vessel **12** constructed of flexible material is compressed (i.e. squeezed) the liquid soap is displaced into the conduit and exits the aperture **14**.

5 The dispensing means **16** may be formed in or incorporated into a variety of shapes that would appeal to the user. One skilled in the art would recognize that the dispensing means **16** may be formed in the shape of, for example, a cartoon character, an animal or a fish.

10 The form of the dispensing means **16** can be integral with the form of the vessel **12**. For example the vessel **12** could have the form of a cartoon character's head with the lower lip of the character extended forming a reservoir **20**. The dispensing means **16** could be in the

15 form of the cartoon character's nose which when squeezed dispenses liquid soap from the nose into the reservoir **20**. One skilled in the art would recognize that the number of potential shapes and forms of the dispensing means **16** that would appeal to the user is limited only by

20 one's imagination.

 In one embodiment the dispensing means **16** and the vessel **12** are formed from a single piece of material, such as plastic. In this configuration, a portion of the material is formed in a spout while the remainder is

25 enlarged forming a flexible vessel **12**. In use the vessel **12**, filled with liquid soap, is compressed forcing the liquid soap into and out of the spout dispensing a quantity of soap in the reservoir **20** below.

30 III. The Reservoir

 The reservoir **20** may be the interior cavity of the vessel **12** itself wherein an aperture **14** is provided to

enable the user to insert the bubble wand. Alternatively the reservoir **20** may be an independent chamber separate from the internal cavity of the vessel **12** or may be an independent chamber with access to the internal cavity of 5 the vessel **12** such that the reservoir **20** is supplied automatically with liquid soap from the vessel **12**.

In the first configuration the reservoir **20** is provided as an opening into the vessel **12** allowing access to its contents with a bubble wand. Preferably the 10 opening has a skirt that descends into the vessel **12** that acts to reduce liquid soap loss when the vessel **12** is tipped over. A variety of such designs are known to those skilled in the art. Additionally, one skilled in the art would recognize that the bubble wand itself can be 15 designed to cover or seal the aperture **14**, thereby preventing spills and excluding water and other matter from entering the vessel **12**.

The reservoir **20** is a basin or chamber able to hold a volume of liquid having at least one opening able to 20 accept a bubble wand. Preferably, the reservoir **20** has a shape and dimensions that will retain an amount of liquid soap sufficient to allow for film formation within the bubble-generating aperture of the wand when the wand is placed in the reservoir **20**. The reservoir **20** may be 25 formed by invagination of a portion of the vessel **12** into its internal cavity or may be prepared separately and affixed to the vessel **12**.

The reservoir **20** chamber may be provided in a variety of shapes including cylindrical having a round, 30 oval or elliptical profile, cuboidal having a square, rectangular or trapazoidal profile, free-formed or any

combination thereof. The chamber may have a shape wherein the length and the width are greater than its depth, wherein the length and depth are greater than its width or wherein the depth and width are greater than its 5 length. The depth of the reservoir **20** may vary and will depend on the length of the wand and the orientation with which the wand is applied to the liquid soap. Preferably the depth is sufficient to provide adequate film formation in the bubble-generating aperture of the wand 10 while not being so deep as to leave an undesired volume of unusable liquid soap in the reservoir **20**. More particularly, the depth of the reservoir **20** is preferably not less than an amount necessary to create a bubble film within the bubble-generating aperture of the wand and not 15 more than the length of the wand. The length of the reservoir **20** may vary and will also depend on the geometry of the wand. Preferably the length of the reservoir **20** is not greater than the length of the wand to allow access to the liquid soap in the reservoir **20** 20 and minimize the unusable amount of soap left in the reservoir **20**. The width of the reservoir **20** may vary and will depend on the width of the bubble-forming portion of the wand. Preferably the width of the reservoir **20** is not less than the width of the wand to allow easy access into 25 and out of the reservoir **20**.

The reservoir **20** chamber may be positioned in a number of orientations. Generally any shape that intrudes into the internal cavity of the vessel **12** is preferable. Most preferably the chamber slopes down and away from the 30 vessel's side and into the internal cavity. Preferably the chamber is able to retain a volume of liquid that efficiently coats the bubble-generating aperture of the

wand during regular use and minimizes waste. The reservoir **20** opening is oriented to allow liquid to be easily dispensed into the reservoir **20** and has a size and shape able to accept the head of the bubble wand containing the **5** bubble-generating aperture. The opening may be round, oval, elliptical, square, rectangular, trapazoidal, free-formed or any combination thereof. When the opening is not square or round it may be oriented in a vertical position generally parallel to the height of the vessel **10** **12** or in a horizontal position generally perpendicular to the height of the vessel **12**. The dimensions of the opening will vary depending on the size and shape of the bubble wand being used. Preferably the opening is of a dimension to allow easy access into and out of the **15** reservoir **20**. Preferably the length of the opening is not less than the head of the wand containing the bubble-generating aperture and the width is not less than the thickness of the portion of the wand to be inserted into the reservoir **20**.

20 In one configuration the reservoir **20** is provided with a filling means that allows the reservoir **20** to be replenished with liquid soap from the vessel **12**. Such a replenishing means may be provided in a variety of ways known to those skilled in the art such as for example the **25** reservoir **20** may have an opening at its base that allows liquid soap from the vessel **12** to fill the reservoir **20** continuously. One skilled in the art would recognize that when providing such an opening that the rim of the reservoir **20** is preferably at the same elevation as the **30** maximum liquid soap fill line of the vessel **12** to prevent the liquid soap from escaping through the reservoir **20**. Alternatively, one skilled in the art could construct an

opening that would allow the transfer of liquid soap to the reservoir **20** having a rim lower than the maximum fill line of the vessel **12** by providing a sufficient vacuum within the vessel **12** during normal use to prevent the liquid soap from escaping through the reservoir **20**. In another configuration the filling means may be a valve that can be opened or closed by the user to replenish the reservoir **20** as needed.

10 IV. The Liquid Soap Holder

The liquid soap holder **30** is a device that may be placed on, or affixed to, a soap dispenser providing a reservoir **20** for liquid soap. The holder **30** may be constructed of a variety of materials including for example stone, metal or polymer. Preferably the holder **30** is constructed of a durable, impact resistant, resilient, flexible polymer.

The holder **30** may be provided in a variety of shapes such as square, rectangular, circular, oval free-formed or any combination thereof. One skilled in the art would recognize that the number of potential shapes and forms of the holder **30** that would appeal to the user is limited only by ones imagination

In one embodiment, the holder **30** comprises an aperture **32** of a size able to receive and or be affixed to the neck, top or side wall of a soap dispenser. This aperture **32** may be any shape or diameter. Preferably, the shape is contoured to the shape of the neck, top or side wall of the soap dispenser to allow the device to be affixed to the soap dispenser during use. In one configuration the holder **30** comprises a reservoir **20** for maintaining a quantity of liquid soap. In another

configuration a reservoir **20** is formed when the holder **30** is affixed to the soap dispenser. For example, the device may be provided in a disk shape having a base and a side wall such that when the device is affixed to the soap 5 dispenser that the side wall of the soap dispenser provides the opposing side wall completing the reservoir **20**. The dimensions of the reservoir **20** will vary depending on the size and shape of the bubble wand being used. Preferably the dimension allows the bubble wand 10 easy access into and out of the reservoir **20**. Preferably the length of the opening is not less than the head of the wand containing the bubble-generating aperture and the width is not less than the thickness of the portion of the wand to be inserted into the reservoir **20**.

15 The holder **30** may further comprise a groove or channel **18** along all or a portion of its length and is preferably sloped downward to the reservoir **20** so that the liquid captured by the channel **18** is directed into reservoir **20**. Alternatively, when the holder **30** is 20 affixed to the soap dispenser a channel **18** or groove is formed that directs dispensed soap into the reservoir **20**.

V. The Soap Dispenser Holder

The soap dispenser holder is a device in which the 25 soap dispenser may be placed or affixed that provides a reservoir for liquid soap. The holder may be constructed of a variety of materials including for example stone, metal or polymer. Preferably the holder is constructed of a durable, impact resistant, resilient, flexible polymer.

30 The holder may be provided in a variety of shapes such as square, rectangular, circular, oval free-formed or any combination thereof. One skilled in the art would

recognize that the number of potential shapes and forms of the holder that would appeal to the user is limited only by ones imagination

In one configuration the holder comprises a 5 reservoir for maintaining a quantity of liquid soap. In another configuration a reservoir is formed when the soap dispenser is affixed to the holder. For example the device may be provided in a cup shape having a base and side walls such that when the soap dispenser is affixed 10 to or placed in the holder that the side wall of the soap dispenser provides the opposing side wall completing the reservoir. The dimensions of the reservoir will vary depending on the size and shape of the bubble wand being used. Preferably the dimension allows the bubble wand 15 easy access into and out of the reservoir. Preferably the length of the opening is not less than the head of the wand containing the bubble-generating aperture and the width is not less than the thickness of the portion of the wand to be inserted into the reservoir.

20 The holder may further comprise a groove or channel along all or a portion of its length and is preferably sloped downward to the reservoir so that the liquid captured by the channel is directed into reservoir. Alternatively, when the soap dispenser is affixed to the 25 holder a channel or groove is formed that directs dispensed soap into the reservoir.